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ABSTRACT

A content outline, learning exercises, and student handouts for a high school unit on logic are presented. The following 11 modules are included: (1) introduction; (2) deductive logic; (3) inductive logic; (4) fallacy: an introduction; (5) fallacy of ambiguity; (6) fallacies of presumption: overlooking the facts; (7) fallacies of presumption: evading the facts; (8) fallacies of presumption: distorting the facts; (9) fallacies of relevance; (10) listening with logic; and (11) review. Seven teaching aids are offered which are designed to be given to students as study aids and learning exercises. The topics of the teaching aids are: thinking aids, blocks to logical thinking, how to overcome blocks to logical thinking, general principles of nonsense, exercises in fallacies, examples of fallacies, and commonly used nonsense examples. Two additional teaching aids were removed due to copyright restrictions. A 10-item selected bibliography of books on logic is included. This document is part of a collection of materials from the Iowa Area Education Agency 7 Teacher Center project. (DC)

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REASONING IN AN AMERICAN SOCIETY

A Unit on

LOGIC

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Cedar Falls, Iowa

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MODULE I: Logical Fallacies

I. Introductory Module:

A. What is logic?

1. Systematized, valid reasoning
2. Axiomatizes various subject matters
   a. Properties of consistency, completeness, and decision-making procedures are important
3. Logic is couched in argument, discussion
4. Passing from premises to conclusions and so involves a relation and the things which it relates.
5. A study of language
   a. How it (logic) does what it does
   b. How it (logic) relates to the world

B. Types of logic (simplified list)

1. Set theory (calculus)
2. Proof theory (mathematics)
3. Symbolic logic (created by set and proof theory)
4. Philosophical logic (examines concepts, lesser concern with mechanics and form, more with content)
5. Informal logic (as opposed to formal)

C. Uses and advantages of logic

1. Improves reasoning powers
2. Clarifies perceptiveness
3. Strengthens ability to evaluate the correctness of arguments
4. Improves ability to detect weak/faulty logic
5. Enhances communication (verbal, nonverbal, symbolic, intentional)
6. Refines interactions with fellow society members
7. Reduces conflict and/or helps overcome conflicts
8. Increases sensitivity to others, language, thought
9. Heightens awareness of words as tools, weapons, barriers

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10. Reduces confusion, uncertainty
11. Defines and gives perspective to a person's relationship to the world
12. Organizes reasoning patterns
13. Reveals stylistic differences in communication
14. Promotes "content" rather than "mechanics"
15. Encourages ethical uses of language/ideas

D. General comments about logic/language

1. How an argument or the language is presented will persuade/influence others
2. Arguments must be assessed according to
   a. expressed idea(s)
   b. motivation/goal/concern
   c. ambiguities/uncertainties
3. Language can be used to
   a. connote different meanings
   b. suggest intrinsic ideas
   c. slant or bias statements
   d. tap emotional resources

   (list can be extended by leader and group members)
4. Fallacies in logic exist
   a. necessary to be detected/identified
   b. logic is a means of preserving personal/group freedoms
   c. content errors
   d. form errors (mechanics/composition)
   e. breakdowns in effective, ethical communication result from fallacies of logical thought/expression

E. Purpose of unit

1. Increase awareness of logical fallacies
2. Develop working definitions of fallacies
3. Improve detection of fallacies
4. Understand how/why fallacies are used

5. Decrease use of logical fallacies in daily communication
6. Refine students' use of valid, effective logic
7. Identify common uses of fallacies in daily interactions
8. Improve students' use of their language (symbol) system

MODULE II: Deductive Logic

I. Definition of Deductive Logic:

A. Arguments (reasoning) in which the conclusion follows with necessity from the premises

1. Some degree of <u>probability</u> is required
2. Premises provide all the information needed to draw the conclusion
3. Concern with correctness of arguments (not with truth or falsity)
4. Validity = premises related to the conclusion
   a. Conclusion must be true if the premises are true

B. Showing validity (possible combinations)

1. True premises and a true conclusion
2. Some or all premises false and a true conclusion
3. Some or all premises false and a false conclusion

<u>Examples</u>:

a. All diamonds are hard. (true)
   Some diamonds are gems. (true)
   Some gems are hard. (true)

b. All cats have wings. (false)
   All birds are cats. (false)
   All birds have wings. (false)

4. Validity - correctness of form of an argument
   a. No argument with that form can have true premises and a false conclusion
5. Types of deductive arguments
   a. conditional statements = complex statement composed of two or more statements joined by "if... then"
      1. "If today is Wednesday, then tomorrow is Thursday
   b. "modus ponens" - affirming the antecedent
      1. the conclusion affirms (proves/supports) a premise
      2. hence: If p, then q.
         p.
         ∴ q.

c. "modus tollens" - denying the consequent

1. second premise denies/negates the first or conditional premise

2. hence: If p, then q.
not q.
▶not p.

d. reductio ad absurdum = indirect proof used to refute the thesis of an opponent

1. Hence: To prove: p
Assume: not-p
Deduce: A false statement
Conclude: Not-p is false, therefore-p.

2. To prove: Speaking the truth and paying debts is <u>not</u> a correct definition of justice.
Assume: Speaking the truth and paying debts is a correct definition of justice.
Deduce: It is to give weapons to a madman. But this is absurd.
Conclude: Speaking the truth and paying debts is not a correct definition of justice.

e. Dilemma = forced choice between two unpleasant alternatives

1. Either p or q.
If p, then r.
If q, then s.
Either r or s.

2. Have class write their own dilemmas. Compare. Discuss in large group.

f. Other types to be discussed if the seminar leader has the needed time (and student sensitivity to the content)

1. categorical statements

2. categorical syllogisms

3. "every" and "all" statements

6. Seminar members should attempt to write and evaluate <u>each</u> type of deductive statement to best engage their thinking skills. Compare examples on the blackboard or overhead. Encourage positive criticism and revision as needed.

MODULE III: Inductive Logic

I. Definition of Inductive Logic:

A. Arguments (reasoning) in which the conclusions' content exceeds that of their premises. (Necessity of the argument is sacrificed; hence, the premises may be true, but the conclusion false.)

1. Conclusions are not always true
2. Conclusions are true as often as possible
3. Normally, additional evidence is needed and can be considered crucial to proving or disproving the conclusion

II. Types of Inductive Arguments:

A. Induction by Enumeration: a conclusion about all of the members of a class is drawn from premises which refer to observed members of that class.

1. We examine a 50 gallon barrel of beans. We take samples from various parts of the barrel.
2. All beans in the observed samples are grade A.
3. All beans in the barrel are grade A.

B. Insufficient Statistics: making an inductive generalization before enough data have been accumulated (jumping to conclusions).

1. Surveys taken with too limited of a sample or test group.
2. Teacher A sees Teacher B arrive at school fifteen minutes late two days in one week. Teacher A concludes that Teacher B is habitually tardy.

C. Biased Statistics: using an unrepresentative sample or one which there is good reason to believe may be unrepresentative.

1. When I'm right no one notices, when I'm wrong everyone notices.
2. Another example occurs when a person refuses to acknowledge certain evidence (usually evidence unfavorable to a belief he holds).

D. Statistical Syllogisms: a conclusion established in one argument is used as a premise in another argument.

1. Almost all F are G.
   The vast majority of F are G.
   Most F are G.
   A high percentage of F are G.
   There is a high probability that an F is a G.
2. Since all of the beans in the barrel are grade A, the next bean to be drawn from the barrel must be grade A.

E. Argument from Authority: citing an authority figure which asserts a conclusion that you endorse.

1. A asserts P.
   Therefore, P.
2. A is a reliable authority concerning P.
   A asserts P.
   Therefore, P.
3. Problems with this reasoning:
   a. misquoting the authority
   b. authority lacks competence, expertise
   c. authority is outside his specialty field
   d. authority lacks evidence on this particular issue
   e. various authorities may disagree

F. Argument against the Man: concludes that a statement is false based on who the person is.

1. Communist Leo Roon believes schools should be desegregated.
   ▶Schools should not be desegregated.

G. Analogy: comparison of objects of two different types.

1. Objects of type X have properties A, B, etc.
   Objects of type Y have properties A, B, etc.
   Objects of type X have property O.
   ▶Objects of type Y have property O.

H. Causal reasoning: inferring from what we directly observe to events and objects which are not available for immediate observation.

1. A forest ranger observes lightning strike a dry forest. On the basis of his causal knowledge, he infers a fire will ensue.

III. Have students write, critique, and revise examples of each of the above. More than one class period may be spent, but attempt to introduce the foundations only. Compare examples on the blackboard or the overhead projector also.

MODULE IV: The Fallacy: An Introduction

Transparency definitions:

Fallacy: (1) An argument that is unsound.
(2) A mistake in reasoning.

- Because of the fallacy, truth is not a product of the discussion.
- Often at first appears to be sound in form and content.

Fallacious Thinking: Using an erroneous, incorrect thinking process; using a fallacy.

I. Activity:

A. Write on board (or transparency):

Item A

$23 \times 46 \times 3.98 = 4210.74$

Item B

"What Mary says is dead wrong."
"How do you know?"
"Are you serious? No one likes Mary."

B. Place students in groups. Have the groups discuss what the two items have in common. After five minutes a representative from each group should tell what has been discovered

C. Discuss findings. Some discussion questions:

1. What exactly went wrong in the math problem?
2. Is there anything wrong with the statements about Mary? If so, what?
3. Is there sufficient evidence to affirm that Mary has errored?
4. Is it possible that Mary really is wrong?
5. What do we actually know from the discussion?

D. Project Transparency of Terms - discuss (place in notes)

E. Project Transparency of Types of Fallacies.

1. Fallacies of Ambiguity: fallacies that result from the multiple meaning of words.
2. Fallacies of Presumption: fallacies that result from similarity between fallacious arguments and correct arguments.
3. Fallacies of Relevance: the use of irrelevant language to buttress an emotional, not logical argument. (place in notes)

F. Assignment - Bring to class one example of a fallacy.

MODULE V: The Fallacy of Ambiguity

A. Project the following transparency:

1. Clean and decent dancing, every night except Sundays.
2. Just received! A new stock of sports shirts for men with 15" to 19" necks.
3. It is impossible to praise this book too highly.
4. I hope you get everything you deserve.
5. Nature decrees what is right.
6. The state can do no wrong.
7. Only man is rational.
   No woman is a man.
   Therefore, no woman is rational.
8. Practice makes perfect. Physicians have practiced the art of healing for thousands of years. Mr. Smith, therefore, who studies at one of our greatest medical schools should be perfect in his field.

B. Have students decide either in groups or as individuals what is incorrect about each example.

C. Discuss results. After you have discussion, explain that there are four kinds of ambiguous fallacies. Have students copy transparency:

1. Amphibology: fallacies resulting from poor sentence structure.
2. Accent: fallacies that result when it is unclear where the stress should fall in a statement, or what tone of voice is being used.
3. Hypostatization: fallacies that result from regarding an abstract word as if it were a concrete one.
4. Equivocation: confusion that arises from the ambiguity of words and phrases allows a key word in an argument to shift its meaning in the course of an argument.

D. Have the students match the four types with the eight examples. Answer: 1, 2 - amphibology; 3, 4 - accent; 5, 6 - hypostatization; 7, 8 - equivocation.

E. Concluding exercise: do review (pp. 63-64) for homework.

Extra! To help students distinguish an abstract word from a concrete one, project the following transparency:

Group A

1. Joe keeps all of our household appliances in working condition.
2. Joe is a mechanical genius.
3. Joe is very handy with tools.
4. Joe is a 100% real American boy.
5. Yesterday Joe replaced a burned-out condenser in the radio.
6. Joe is awfully useful to have around.
7. Joe keeps that radio in working condition.

Group B

1. Children are just a lot of trouble.
2. Little Johnny is a darling child.
3. The population of this country will double in 35 years.
4. All of my boys will get the best education possible.
5. The period of dependency on parents is longer for human infants than for any other life form.

Have students individually arrange, in order of increasing abstraction, the two groups of statements.

Fallacies of Ambiguity Review

1. I shall lose no time in reading your paper.
2. May the winner emerge victorious.
3. Don't fear. Mother Nature always looks after her offspring.
4. Tourists Taken In. (Road sign)
5. Our X-ray unit will give you an examination for tuberculosis and other diseases which you will receive free of charge. (Public service announcement)
6. I hope America will never lose the good sense which comes from living close to the earth. (Ronald Reagan)
7. We stand behind every bed we sell.
8. You say nothing eloquently.
9. Smith only promised a donation.
10. Whenever the State butts into private enterprise, it makes a mess of things.
11. The end of a thing is its perfection; death is the end of life; death is, therefore, the perfection of life.
12. The fund has a deficit of $57,000 which will be used to pay teachers' salaries.
13. The world does not owe you a living.
14. We of today must meet concrete problems in a concrete way. Let us therefore accept the leadership of our captains of industry and forget the philosophers for a while.
15. England does not love coalitions. (Benjamin Disraeli)
16. When an employee absent from duty on account of illness dies without making application for advanced sick leave, the fact of death is sufficient to show a 'serious disability' and to dispense with the requirement of a formal application and a medical certificate. (Regulation governing leave from employment)
17. Nothing is too good for her.
18. It is impossible to be too enthusiastic about the new exhibition of sculpture.
19. You have believed a lie that you cannot get well. The truth will make you free. Love Nature. She is gentle and holy. To obey her is to live. (Circular on healing)
20. There was a death on Capitol Hill today. The name of deceased was Political Expediency and the only survivor was Hope. (News analyst)

21. Love your neighbor.

22. You may think as you please.

23. Mr. Raymond has accepted the post of organist. Extension of the graveyard has become necessary a year before expected. (Church newsletter)

24. The will of the people is a dangerous guide for a government; the people is a great beast, as Hamilton said, and only the educated elite are in a position to know what policies the government should follow.

25. If Americans can be divorced for "incompatibility," I cannot conceive why they are not all divorced. I have known many happy marriages, but never a compatible one. For a man and a woman, as such, are incompatible. (G. K. Chesterton)

26. Jones thinks McIntosh will succeed.

27. Why, if thou never wast in court, thou never sawest good manners; if thou never sawest good manners, then thy manners must be wicked; and wickedness is sin, and sin is damnation. Thou art in a parlous state, shepherd. (Touchstone, in Shakespeare's *As You Like It*)

28. You can skate more than one mile on one slice of bread. (Baker's advertisement)

29. It is enterprise which builds and improves the world's possessions. If enterprise is afoot, wealth accumulates whatever may be happening to Thrift; and if enterprise is asleep, wealth decays whatever Thrift may be doing. (John Maynard Keynes, *Treatise on Money*)

30. Abraham Lincoln was obviously not the man it is thought he was, for he said, "You can fool all of the people some of the time."

31. We come down then, finally, to force as the ultimate of ultimates. (Herbert Spencer, *First Principles*)

MODULE VI: Fallacies of Presumption - Part I: Overlooking the Facts

A. Divide class into groups. Have each group pick a reporter.

B. Give each group Handout A. Discuss. Then pass out Handout B. Students are to match the material from Handout B to Handout A.

Handout A

Presumptions

1. Sweeping generalization: Using a general rule in a case that is an exception to that general rule.

2. Hasty generalization: Using an isolated case as the basis for a general conclusion.

3. Bifurcation: Presuming that a distinction or classification is exclusive and exhaustive when other alternatives exist (either/or reasoning).

Handout B

(2) 1. Because I can tear page 271 of the telephone book in half, I can also tear the entire phone book in half.

(3) 2. If you know about B.M.W., you either own one or want one.

(3) 3. We must choose between safety and freedom. And it is in the nature of good Americans to take the risk of freedom.

(1) 4. Everyone has a right to his own property. Therefore, even though Jones has been declared insane, you have no right to take away his weapon.

(1) 5. I cannot tear this phone book in half. Therefore, I cannot tear one page of the phone book in half.

(2) 6. I had a bad time with my former husband. From that experience I have learned that all men are no good.

(3) 7. Spare me the details. Is the report good or bad?

(2) 8. I know one union representative and she is a terrible person. I would not trust any of them.

(1) 9. Since horseback riding is healthful exercise, Harry Brown ought to do more of it because it will be good for his heart condition.

(2) 10. Because Jones is an outstanding quarterback, the team on which he plays must be a good team.

C. Discuss the results and give the answers.

D. Have students individually create one example of each fallacy.

E. Complete review.

Fallacies of Presumption: Overlooking the Facts Review

1. The verdict rendered by the jury was reasonable and just. Mr. Black, who was a member of the jury, is therefore, a reasonable and just man.

2. Shakespeare cannot have been a great writer, for he did not even make up his own plots.

3. There are two kinds of people in this world: the "haves" and the "have-nots."

4. If we're going to buy a car, we have to buy either a good one or a cheap one. We can't afford a good one, and we don't want a cheap one; so we'll just have to do without a car.

5. Since the city revenues have fallen off, I propose a twenty percent across-the-board cut for all city departments. We'll just have to get along with four-fifths of the service we've been used to. (Proposal by a city official)

6. Doctors are all alike. They really don't know any more than you or I do. This is the third case of faulty diagnosis I've heard of in the last month.

7. Since it is right to speak the truth, it is therefore right to tell our friends what we think of them.

8. Only the rich and the poor need concern the government: the rich because they try to influence legislators through the power of their wealth; the poor because they have no wealth to care for themselves.

9. A mob is no worse than the individuals who make it up.

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MODULE VII: Fallacies of Presumption - Part II:
Evading the Facts

A. Pass out the handout "Evading the Facts." Discuss.

B. Ask students for examples of these fallacies. Point out that teachers, parents, and television are all good sources.

C. Divide students into small groups. Each group is to select a recorder.

D. Pass out to each group "Evading the Facts Exercise." Discuss (time limit set by teacher).

E. Have recorders report results to class. Discuss the implications.

F. Use review exercise.

Evading the Facts

1. Begging the question: Instead of offering proof for a conclusion, the conclusion is restated in another form.

   Examples:

   a. The belief in God is universal because everyone believes in God.

   b. God exists!
      How do you know?
      The Bible says so.
      How do you know the Bible is correct?
      Because the Bible is the word of God.

2. Question - begging epithets: The use of slanted language that reaffirms what we wish to prove but have not yet proven.

   Epithet: A descriptive word or phrase used to characterize a person, thing, or an idea.

Examples:

a. This criminal is charged with the most vicious crime known to man.

b. The councilman's shocking proposal is designed to help welfare cheats.

3. Complex question: A question that leads one to believe that a particular answer to a prior question has been answered in a certain way when that is not the case.

Examples:

a. Have you stopped beating your spouse?

b. Are you still a heavy drinker?

4. Special pleading: Applying a double standard; one for ourselves (because we are special), and another (a stricter one) for everyone else.

Evading the Facts Exercise

You are the campaign manager for a political candidate running for a major office. There are certain "hot" issues where any position is harmful. These are abortion, gun control, E.R.A., income tax reform, welfare spending, and national defense.

Assume that your candidate has been asked by a local group to speak on these six topics. Using the four methods of evading the facts, design answers for your candidate.

Fallacies of Presumption: Evading the Facts Review

1. Haste makes waste, because hurried activity is always careless activity.

2. "We're worried about your son, Mr. Norris," say the sixth-grade teacher. "He seems lazy. He persuades young Stewart to do all his work." "Lazy!," exclaims Norris, "That's executive ability."

3. Which one of you left the door open?

4. I'm surprised at you. A man of your culture and upbringing—defending these hoodlums!

5. The world was not created by God, for matter has always existed and therefore the world must have always existed.

6. The new bell in the chapel is louder than the old one. The old one didn't make nearly as much noise.

7. Why are the students in this class more intelligent than others in the University?

8. I will not commit this act because it is unjust. I know it is unjust because my conscience tells me so; and my conscience tells me so because the act is wrong.

9. On November 5, three of the accused met at the house of the fourth defendant, Smith. There, behind locked doors and heavily curtained windows, these four conspirators began to hatch their dastardly plot.

MODULE VIII: Fallacies of Presumption - Part III:
Distorting the Facts

A. Pass out Handout VIII. Discuss it, having the students expose what is wrong with each statement.

B. Have the students, in groups of two, create more examples. Stress that the wilder the better.

C. Discuss student examples.

D. Pass out the handout "Distorting the Facts." Have students catagorize their creations.

E. Use review exercise.

Handout VIII

1. The rain in Wisconsin was twelve percent above normal last year. There was a twelve percent increase in automobile accidents last year also. Watch out for that rain!

2. My uncle, who suffered from a lung disorder, moved to the piney woods of Texas. After two years he was much better. Piney woods can cure anything.

3. Milk consumption in Oregon was up four percent last year; so was jogging. Jogging is great for the dairy farmer.

4. Every time I mow the grass it rains. It will rain this afternoon because I just finished mowing the grass.

5. According to an A.P. survey, those states where the police use blue lights have no indictments of sheriffs, while in those states where the police use red lights there are many indictments. I am glad to be moving to a state that uses blue lights.

Distorting the Facts

1. False analogy: Using an erroneous comparison that distorts the facts.

Examples:

a. Why should mine workers complain about working ten hours daily. Professional people often work at least that long without harm.

b. Why cannot you students complete the assignment during the class period? I completed it in ten minutes. (The teacher is speaking.)

2. False course (post hoc, ergo propter hoc): Suggestions that events are casually connected when there is no connection; suggesting that because one event occurred before another, the first caused the second.

Examples:

a. Every major war during the post few generations has occurred during the administration of a Democrat. To prevent war we should not elect a Democratic president.

b. More young people are attending college, yet the juvenile delinquency rate is much higher. It is clear that education corrupts young people.

3. Irrelevant thesis: An argument in which an attempt is made to prove a conclusion that is not at issue.

Example:

a. I fail to see why hunting should be considered cruel when it gives tremendous pleasure to many people and employment to even more.

Fallacies of Presumption: Distorting the Facts Review

1. The barometer is falling; therefore, it will rain.

2. I am the father of two daughters. When I hear this argument that we can't protect freedom in Europe, in Asia, or in our own hemisphere and still meet our domestic problems, I think it is a phony argument. It is just like saying that I can't take care of Luci because I have Lynda Bird. We have to take care of both of them and we have to meet them head on. (Lyndon Johnson)

3. I do not permit questions in my class, because if I allow one student to ask a question, then everyone starts asking questions and the first thing you know, there is no time for my lecture.

4. Student government is a mistake from the beginning. Look what happens in homes where parents let the children run things their own way!

5. TV can't be harmful to children, because it occupies their attention for hours and thus keeps them off the street.

6. An electrical power failure in the Southwest is imminent. UFO's have been seen over Boulder Dam, just as they were seen over the Niagara powerhouse shortly before the great New England blackout.

7. Early in 1950 the United Nations International Children's Emergency Fund distributed powdered milk to expectant mothers in the village of Polykastron in Greece. Shortly afterward, two women who used it gave birth to twins on the same day—the first twins born in the village in 10 years. The women of Polykastron drew the obvious conclusion: they decided they'd rather not use UN powdered milk.

8. If we really believe in the right to life, liberty, and the pursuit of happiness we'd have abolished prisons long ago.

9. Civil disobedience leads inevitably to riots, and riots condoned lead inevitably to revolution. (Spiro Agnew)

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MODULE IX: The Fallacies of Relevance

A. Pass out handout "The Fallacies of Relevance." Discuss.

B. Pass out "The Fallacies of Relevance Exercise." Have students in groups match the different fallacies of relevance to the examples.

C. Discuss the answers.

D. Have the students collect examples of the fallacies of relevance from newspapers. Discuss what they find.

The Fallacies of Relevance

1. Personal attack (ad hominem): An argument that diverts attack away from the question being argued by attacking those persons making the argument.

   Example:

   Don't listen to him. He's a scoundrel.

2. Mob appeal (ad populum): Appeals to those emotions that can sway a large crowd of people.

   Example:

   No one in this room wants to deny any child a decent education. But let's remember that this school is our school and belongs to our children.

3. Appeal to pity (ad misericordiam): Trying to win an argument with an appeal for sympathy.

   Example:

   I deserve an A for this course because if I don't receive an A my father will beat me.

4. Appeal to authority (ad verecuudiam): An argument that uses as authorities those who have no special competence regarding the matter at hand.

   Example:

   The idea of an open lunch hour for high school students is ridiculous. I talked to three people in my church and they all agreed.

5. Appeal to ignorance (ad ignorantiam): An argument that uses an opponent's inability to disprove a conclusion as proof of the conclusion's correctness.

   Example:

   There is no intelligent life in outer space for no one has been able to prove that there isn't.

6. Appeal to fear (ad baculum): Using threats rather than proof to win an argument.

   Example:

   If you don't convict this murderer, one of you may be his next victim.

The Fallacies of Relevance Exercise

1. If your idea were any good, someone would have thought of it already.
2. We're all Americans here, and we all share one ideal.
3. Henry cculdn't have stolen it. He's never done anything like that in his life.
4. No, if you don't mind losing a tire, going off the road, and maybe killing yourself, you don't need a new tire.
5. Old soldiers never die; they just fade away.
6. I suppose *you* never did anything wrong?
7. No breath of scandal has ever touched the Senator. Therefore he must be incorruptibly honest.
8. Congress shouldn't bother to consult the Joint-Chiefs-of-Staff about military appropriations. As members of the armed forces, they will naturally want as much money for military purposes as they think they can get.
9. It must be so. I read it in a psychology book.

10. You are in a strange town, strolling aimlessly donw a street. You could—if you don't fully understand your rights—wind up in jail for the night. (Advertisement for *Time-Life Family Legal Guide*)

11. A basic weakness of the work, however, is that the hearer cannot help identifying some of the emanations from the speaker with more mundane associations. You hear roars from an air terminal, background effects from a cheap radio thriller, the staccato click of rolling dice, screeching brakes, or the unpleasant vibrato of an electronic organ.... What value does such a work have as music? Your guess is as good as mine....One thing I do know. Luening and Ussachevsky cannot be dismissed as playboy pranksters. Too many men, not only in this country but also on the continent, are following their same line of thought. (Critic William Mootz, on the *Rhapsodic Variations for Tape Recorder and Orchestra* by Luening and Ussachevsky)

12. All loyal Americans will deplore the passage of this bill.

13. There's no point in listening to what you have to say; everybody knows you're on the radical right.

14. You'd better find the fallacies in these arguments and identify them correctly, for if you don't I'll know you haven't been paying attention in class.

15. You don't see anyone marching around here protesting, do you? No demonstrations. No midnight meetings. That means nobody has any grievances here.

16. We favor extended social security. Isn't that the American thing to do? And we are trying to reduce social discrimination. That's the American way too.

17. The Golden Rule is basic to every system of ethics ever devised. Everyone accepts it in some form or other. It is, therefore, an undeniably sound moral principle.

18. Let's win this one for Ike. (Former President Richard Nixon's 1968 acceptance speech)

19. How should a man avoid pessimism who has lived almost all his life in a boarding house? And who has abandoned his only child to illegitimate anonymity? At the bottom of Schopenhauer's unhappiness was his rejection of the normal life—his rejection of women and marriage and children. (Will Durant, *The Story of Philosophy*)

20. I'm on probation, Sir. If I don't get a good grade in this course, I won't be able to stay in school. Please, could you let me have at least a C?

21. Gentlemen, I am sure that if you think it over you will see that my suggestion has real merit. It is only a suggestion, of course, and not an order.

22. The Cadillac Eldorado. Life is too short to put it off for long.

23. It's the old time religion, and it's good enough for me.

24. A substantial Federal subsidy for the lettuce growers is sorely needed. These growers have suffered from a late spring, a killing frost, and a serious shortage of field help. The resulting loss has depressed the entire Imperial Valley retail industry.

25. It's clear that Jones is an innocent man. He was tried for the crime before a jury of his peers and the prosecution was unable to prove him guilty.

26. Is it not strange that wet England produced Shakespeare, wet Germany produced Schiller, wet America produced Lincoln, while dry Turkey has produced no great men since the wine-drinking Mahomet? (Anti-Prohibition Manual)

27. I don't care how sick he is. He is wanted at the shop immediately. When the supervisor sends for a man, the employee is expected to make his appearance.

28. A vote for my opponent is a vote for war.

29. I have watched three loved ones and a dear friend die slowly and horribly of cancer. I watched the light of reason die in their eyes and a haunting madness take its place. The Bible says, "Blessed are the merciful, for they shall obtain mercy." Don't let them tell you euthanasia is wrong.

30. The Canadian government is having similar thoughts (about banning seal hunting) after four years of hostile publicity and occasional exaggerations about the hunt. Angry letters and petitions flood Ottawa, and demonstrations have besieged Canadian embassies and consulates. Among the protestors are Americans obviously unaware that the U.S. sanctions hunters who annually club or shoot 120,000 seals in the Pribiloff Islands off Alaska. (*Time*, 21 March 1969, p. 30.)

31. I am against liberalizing the abortion and sterilization saws because this is the program Adolf Hitler advocated and used to form the so-called master race. Further liberalization of legislation along these lines would open the way for mercy killing, genocide, and euthanasia, and could give the State rights over the individual citizen that may lead to grave consequences in the near future. (Election poster)

32. Yes, Virginia, there is a Santa Claus. Alas! How dreary would be the world if there were no Santa Claus! It would be as dreary as if there were no Virginias. (Francis P. Church, editorial in *The New York Sun*, December, 1897)

33. The phenomena reported by the medium are so unusual that extremely good evidence is needed before we can believe them. And it is impossible to obtain the required evidence because we cannot trust people who believe in such phenomena.

34. But let us set aside the dry legalistic aspects of this issue and get to the simple heart of the matter, which can be put in a nutshell. Picture, if you will, the young lad sent off to service abroad, by the vote of his senator or congressman. He had nothing to say about it; he is pushed around by his so-called representative, but he cannot vote; he can only silently grieve.

35. The hullabaloo over dishonesty among athletes at the All-State Conference is unfounded, for the Mayor who attended that Conference declared unequivocally that he saw no evidence of dishonesty whatsoever.

36. Let's get down to brass tacks. None of us here is a Philadelphia lawyer; we're just plain folks, trying to see our way clear. There's been a lot of high-falutin' talk about "economic implications" and such like, but the plain fact is that if they build that dam here it will cost us money we just don't have. I'm against it—we're all against it.

37. Bishop Wilberforce scored a telling hit in his famous debate with Thomas Huxley on the subject of evolution. He simply inquired casually whether Huxley was descended from the monkey on his mother's side or his father's side of the family.

38. Socrates, I think that you are too ready to speak evil of men: and, if you will take my advice, I would recommend you to be careful. Perhaps there is no city in which it is not easier to do men harm than to do them good, and this is certainly the case at Athens, as I believe that you know. (Anytus in Plato's *Meno*)

MODULE X: Listening with Logic

(adapted from Spann, S., and Culp, M. Thematic Units in English and the Humanities. Urbana, Illinois: National Council of English, 1980)

A. Tell the students that you are going to read a script that contains some fallacies. Their job is to:

1. After detecting the fallacy, reduce it in their own words to one or two statements.

2. Identify (label) the fallacy.

B. The script follows. Read it twice to the class.

Ted: Did you see that Ormand Telly is running for the senate?

Bob: So?

Ted: Are you going to vote for him?

Bob: Maybe. Why?

Ted: He contradicts himself so much, Bob. That's not what we need in Washington.

Bob: Why, most people I know contradict themselves. (Appeal to authority)

Ted: Trust me. He's lousy.

Bob: You're wrong about Telly. Even your own family won't claim your radical politics. (Personal attack)

Ted: Leave my family out of this.

Bob: But you voted for McGovern. That makes you a radical. (Hasty generalization)

Ted: Listen, buddy, since I've been voting there has been four races for the Senate and every time I've voted for a winner. If you want to support a winner, vote against Telly. (False cause)

Bob: Yeah, sure.

Ted: Let me tell you. Telly is anti-business. If he gets in, his views will cause you to lose your job. It will be terrible for all business to have that commie-rat in Washington. He and his friends are out to get all of us. (Mob appeal)

Bob: I wouldn't vote for your man because you are the sorriest political expert I've met. (Personal attack)

C. Divide the class into groups and have them discuss what they have heard. Have each group present findings to the class. Compare findings.

D. Have groups make their own scripts.

MODULE XI: Review

A. Pass out "Fallacies: Review." Have students do individually.

B. Collect papers and correct. This can be done in class.

C. Discuss results with class.

D. This review can also be used as a pretest.

Fallacies: Review

In each of the following exercises, determine the fallacy committed:

1. When confronted with the charge of corruption in his administration, the mayor replied, "I'm not saying there is no corruption," but he added that any administration of any present-day large city is bound to contain some corrupt individuals.

2. Father: "I'm not voting for any young guy who's just barely out of the play pen."

   Son: "Well, he's all we've got because most of the old politicians are in the state pen."

3. Oliver Wendell Holmes: "The life of the law has not been logic; it has been experience."

4. Are you still using that greasy kid stuff? C'mon man, the wet-head is dead.

5. Last year, I worked with a graduate of State Teachers College, and she was the most incompetent "teacher" I've ever seen. So I absolutely refuse to team-teach with this new one from State Teachers. I have enough to do without training her.

6. Last year, I had three students who were new to the school from another part of town. And they caused more trouble and disruption then you've ever seen. With two more this year, I know I'm in for it.

7. I've already had the two boys from that family. They were the slowest things in the class. Now I have the youngest, and I decided right away to put her in the slow group, because I know she won't be able to keep up. Those Cedarleaf kids just can't get it.

8. Man with no legs on the street selling pencils.

9. Joe Namath advertising panty hose.

10. Would you be close friends with someone whose basic principles were diametrically opposed to yours? Of course not. Likewise, our government should have nothing to do with those totalitarian regimes run by fascist dictators.

11. Ad showing Pancho Gonzales in tennis outfit, with racquet, holding a drink in his hand. Beside him is a bottle of Teachers Scotch. Caption reads: "What makes him the tennis player's tennis player makes us the Scotch drinkers' Scotch."

12. Senator Chrisman has proposed this new bill for energy conservation. But need I remind the Congress that the good Senator's state will benefit more than any other state from this bill. We all are aware, of course, that he is facing a tough fight for re-election this year.

13. Is the U.S. Congress being asked to seriously consider a bill out of the ethics committee which was formulated by a man who is right now under investigation for campaign spending violations?

14. Dr. Evans, I know I haven't done the work for your class, but if I don't get a B for this course, my average will drop below the cut-off and I'll lose my athletic eligibility.

15. Oh, I'm so glad you called. I was hoping and wishing so much that you'd call, I figured if I thought about you hard enough you'd get some vibrations. I did, and you obviously did get the vibrations. I knew it would work.

16. Listen, nobody's wearing short skirts anymore. If you want to stay in style you'd better get those hemlines lowered.

17. In 1932, we elected Roosevelt and during his administration we got into World War II. Then we had Truman and the Korean War. Then we had Kennedy and Johnson and the Vietnam War. Can we afford another Democrat?

18. Before going into politics, my opponent had a brief and undistinguished career in business.

19. Before applying to the university for a teaching post in the political science department, Mr. Hutchison ran unsuccessfully for mayor. Do we really want someone teaching our children who couldn't make it in the real world.

20. Those who can, do; those who can't, teach.

21. You said you were going to stay home today and do your school work. I called and got no answer. You were obviously out somewhere goofing off.

22. Let's quit horsing around. The permanent denizens of the welfare rolls, as distinct from the handicapped and the helpless and the temporarily unfortunate, are moral criminals and should be treated as legal criminals too. If parents of a child born out of wedlock are unable or unwilling to care for the child, the parents should be jailed and the child should be put in an institution. For the second bastard, the parents should be sterilized. Here I note, parenthetically, the distinction between punitive sterilization and eugenic sterilization. The latter is forbidden by natural law, by the Catholic Church, and I trust by other churches. Not so the former - though I have no doubt the bleeding hearts would be aghast at the idea. Drastic, yes. But does anyone doubt that our present system calls for a drastic remedy? We should never forget that the cost of welfare is only secondarily financed. It breeds a growing underclass that saps the foundation of education, morals and patriotism, that assured an ever-growing criminal cadre. Welfare attacks America. (William F. Buckley, Jr., King Feature Syndicate, Inc.)

23. "My next completely unloaded question is: shall we seek a disastrous victory in Vietnam by escalating the slaughter or understandably pull out with honor, dignity and the respect of all mankind?" (National Review, April 20, 1971)

24. Dear Ann Landers: Our 12 year old son is selling his homework and my husband thinks its just terrific. He keeps saying "that kid will make it big one of these days." Albert has fixed prices (from what I gather when he talks on the telephone). He gets a dime for an arithmetic assignment and 25 cents for a book review. The boy is doing a very good business. He bragged at dinner tonight that he has saved up $21.00. I think this is disgraceful but whenever I open my mouth I am shouted down. My husband insists that Albert has ingenuity, is smart and is making his brains pay off. If I am wrong, please tell me. If my husband is wrong, please tell him. I'm beginning to doubt my own sanity. (Chicago Mother)

25. "45 Million Women Can't Be Wrong" (Ad for fasteners, zippers, buttons).

26. Geritol ad which shows 7 women. "All These Women Are Exactly The Same Age. Some Of Them Just Take Better Care Of Themselves."

27. Ad: "Why did Jeanne Crain, Who Could Afford Any Sewing Machine, Want a Kenmore From Sears?"

28. Picture of candidate sitting in office with papers cluttering desk, dressed in shirt and tie, open at collar.

29. Ad for Temple-Stuart traditional furniture: "So Solidly American Every Generation Loves It."

30. Ad for Virginia Slims: "There is No Other Purgatory But A Woman." (Beaumont and Fletcher); followed by "You've Come a Long Way, Baby."

31. Political Poster: Independent
Robert J. Sarrenti for Representative
Veteran

32. Who has been fighting the tough fights for the people of Roslindale? Keep Mike Connally fighting for you.

33. If you have a head for cars, head for Dodge.

34. Newspaper headline: Guard Fired First Short At Kent State. (Pulitzer Cameraman)

35. On campaign swing through several midwestern states, Gerald Ford said that more Republicans must be elected to Congress in order to avoid having a "legislative dictatorship."

36. "The reason you don't want to start lying is because once you begin lying, you'll start lying all the time. Lying is like pollution, you drop on little candy wrapper, then you drop another, and then it all adds up. Then you'll have a big pollution problem."

37. Judge Michael A. Musmanno (of the Pennsylvania Supreme Court, which ruled in 1967 that Terry Southern's novel Candy, could not be banned for obscenity in that state) also dissented and took his colleagues to task for saying that, although they allowed Candy to circulate, they did not approve of the book (the court's opinion said the book was "revolting and disgusting"). "This is like saying, Judge Musmanno wrote, "that the court does not approve of a snake entering a nursery, but forbids anyone to build a fence around the nursery to keep the serpent out." (New York Times, October 1, 1967)

38. If you train a dog, when it's a puppy, with appropriate rewards and punishments, it will always obey you in later life. The same thing applies to raising children. If you are strict with them when they're young, you won't have any trouble out of them later.

39. Ronald Reagan speaking about the Watergate burglars: "What these men did was wrong, but they're not criminals."

40. The issue is racism, not busing--Stop ROAR. (Taken from bumper sticker in Boston. ROAR is Restore Our Alienated Rights, a group of citizens opposing busing in Boston.)

41. Relief day and night. Your choice: stay at home with your cold or take Contac.

42. With all the talk about smoking, I decided I'd either quit or smoke True. I smoke True.

43. Arpege. Very simply, the most beautiful gift in the world.

44. Don't just make them feel good, make them feel important. Give the only vodka imported from Russia.

45. Had enough of harsh taste? Come up to Kool, the only cigarette with the taste of extra coolness.

46. Letter to the editor of Newsweek concerning female jockey Mary Bacon, as admitted member of the Ku Klux Klan: "I'm glad to see that a woman has made it in a traditionally all-male field, but has Mary Bacon been kicked in the head once too often? A more tasteless and revolting display of ignorance I've never read!"

47. Letter to editor concerning Vietnamese refugees: "Along with others, I most strongly resent your cover with (The New Americans) blazoned across it. These people are no more American than the thousands of Mexican (wetbacks) who continuously plague our border states. Only an individual who has been in this country, studied, assimilated its culture and passed very stringent examinations is a U.S. citizen, and we are belittling every foreign-born person who has ever striven to obtain the status of 'citizen of the U.S.A.' when we are so intimated by a President that we accept whatever he dictates."

48. Ladies and gentlemen, our speaker tonight has urged that we actively apply pressure to Israel to solve the plight of the Palestinian refugees. But it is well known that our "distinguished" speaker is an avowed socialist and a brazen womanizer.

(The following are several examples from The Little Prince, as discussed by D'Angelo.)

49. Part four tells of a Turkish astronomer, who, in 1909, discovered a new asteroid through his telescope. When he presented this discovery to the International Astronomical Congress, he was dressed in Turkish costume, and consequently nobody believed him. In 1920 he presented the same discovery dressed in European costume, and now everyone believed him.

50. In part twelve, the Little Prince meets a tippler. The following conversation is carried on between the Little Prince and the tippler: "Why are you drinking?" "So I may forget." "Forget what?" "Forget that I am ashamed." "Ashamed of what?" "Ashamed of drinking."

51. In part fifteen, the Little Prince meets a geographer. A geographer is defined as a scholar who knows the location of all the seas, rivers, towns, mountains, and deserts. When the Little Prince inquires about the geography of the planet, the geographer maintains that this question can only be answered by the explorers of this planet. But this planet has no explorers. Therefore, it is impossible for this man to be a geographer of this planet. The man who calls himself a geographer contends that only when the moral character of an explorer is good will an investigation be made of his discovery.

52. In part nineteen, the Little Prince makes a hasty generalization. From the top of a mountain he observes that this planet looks dry, harsh, and forbidding. (He landed in the desert.) He concludes that the entire planet is this way.

53. It isn't difficult to list the world's greatest books. Their titles spring instantly to everyone's mind because a book becomes great only when it is recognized as being great--generation after generation.

TA-1: Thinking Aids

(Adapted from Adams, J. Conceptual Blockbusting: A Guide to Better Ideas. New York: W. W. Norton, 1979.)

1. Morphological Forced Connections. For the subject matter you are analyzing do the following:

   a. List the attributes of the situation.
   b. Below each attribute, place as many alternatives as you can think of.
   c. When completed, make random "runs" through the alternates, picking up a different one from each column and assembling the combinations into entirely new forms of your original subject.

2. Checklist for New Ideas. Answer these questions to help analyze any new idea:

   a. Put to other use?
   b. Adapt it?
   c. Modify it?
   d. Magnify it?
   e. Minify it?
   f. Substitute it?
   g. Rearrange it?
   h. Reverse it?
   i. Combine it?

3. Manipulative Verbs. Use these words to analyze your new idea with the hopeful end being the further development of it:

   a. Multiple
   b. Divide
   c. Eliminate
   d. Subdue
   e. Invert
   f. Separate
   g. Transpose
   h. Unify
   i. Distort
   j. Rotate
   k. Flatten
   l. Squeeze
   m. Complement
   n. Submerge

o. Freeze
p. Soften
q. Fluff-up
r. By-pass
s. Add
t. Subtract
u. Lighten
v. Repeat
w. Thicken
x. Extrude
y. Repel
z. Protect
aa. Segregate
bb. Integrate
cc. Symbolize
dd. Abstract
ee. Dissect

4. Brainstorming. In this thinking aid for groups, the group's goal is conceptualization. Group members are motivated by their need for affiliation with others.

Rules:

a. No evaluation of any kind.
b. Encourage all participants to think of the wildest idea possible.
c. Encourage quantity of ideas. The more the better.
d. Participants build or piggyback on each others ideas.

Procedure:

a. Pick a recorder.
b. Explain the rules.
c. Brainstorm.

5. Synetics. Like brainstorming, but is more complex and sophisticated in that it allows criticism and a higher level of expertise.

The synetics process:

a. State the problem.
b. The group questions the problem-giver (the teacher, leader, etc.) about the problem to gain background information.
c. The group restates the problem in several ways in order to insure that the problem statement is thoroughly explored.
d. One problem statement is chosen as the best.

e. The group proposes two or three solutions tc the problem.

f. The problem-giver picks one solution and makes two positive comments about it, and then his or her major reservation about it.

g. Repeat steps d and e again and again until satisfactory solution is arrived at or time runs out.

TA-2: Blocks to Logical Thinking

(Adapted from Kytle, R. Clear Thinking for Composition. New York: Random House, 1977.)

I. Cultural Conditioning

A. Culturally Conditioned Assumptions. We are socialized into a particular culture. This determines the form of many of our attitudes and values. Although attitudes and values reflect their social setting, the social setting changes more rapidly than do the attitudes and values. This leaves many people with attitudes and values that are at odds with the reality of the world they live in. Some examples:

1. Individuality. Believed in by most Americans while at the same time criticizing those who assert their individuality.

2. The American Dream. Many Americans believe if they work hard and save their money they can become wealthy. Education and hard work allows average people to go from "rags to riches." However, social stratification studies indicate that upward social mobility in America is limited.

3. Progress. Many Americans are firmly committed to the idea of progress, measured by an increasing gross national product, a higher standard of living, and a growing population. Contrast this belief with the ecologically minded one that points out that continuous growth can be dangerous and destruc- to the world.

B. Hasty Moral Judgements. Americans have a strong tendency to label actions and ideas as either good or bad. This in turn blocks analysis on the problem under study. Analysis attempts to understand what something is; hasty moral judgements prevent such understanding.

C. Compartmentalization. This allows us to say we believe one thing while acting as though we believe something else without noting any contradiction. For example, arguing against mercy killing and for capital punishment without seeing any contradiction.

D. Either-Or Thinking. Thinking that ignores the complexity of the subject. All of us need to realize that this is no "Truth," but many "truths" regarding most subjects.

Forms of either-or thinking:

1. Intolerance of ambiguity - having a strong need for certainty.

2. The logic of mutual exclusiveness - some things are mutually exclusive. But concepts such as states of mind, institutions, issues, or behavior are not.

3. The antithetical nature of our language: good-bad, happy-sad, guilty-innocent, etc. By having these polar opposites readily available, we are encouraged to think in terms of either-or.

Applications of cultural conditioning:

1. Decide what you (or your group) feels is the culturally conditional moral judgement (good or bad) for each of the following:

   a. Monogamy
   b. Chastity
   c. Adultery
   d. Success
   e. College education
   f. Romantic love

   What problems are created by these judgements? How can thinking be limited by these judgements?

2. Identify the culturally conditioned assumption inherent in each of the following and list one exception to it.

   a. Nothing ventured, nothing gained.
   b. Many books today contain so many obscene words that you can't let your children read them.
   c. Don't marry until you find the right person.

II. Resistance to Change

People just don't like to change. We are all somewhat uncomfortable with new, unfamiliar ideas. Some examples:

A. Ethnocentrism: A belief that mine, because it is mine, is better.

B. Reaction formation: An immediate, strong, emotional reaction against something.

C. Primary Certitude: An immediate, strong, emotional feeling. "I know the truth about that.

D. Irony: One of the surest tests of clear thinking is the ability to recognize irony. This recognition should be cultivated.

E. The Closed Mind: A person who "knows" and therefore needs no more information on the subject. "Don't confuse me with the facts."

Application: Resistance to Change:

Decide which of the following proposed social changes you favor and which you oppose. Then try to account for your position by the different parts of cultural conditioning and resistance to change.

1. Legalize homosexual marriages.
2. Letting students drop out of school at age 14.
3. Letting prisoners have consensual sex with their visitors.
4. Restricting automobile ownership to one per family.
5. Laws prohibiting human sexual activity in public should be abolished.

III. Unconcretized Abstractions

This involves using abstractions in such a way that they appear to have only one meaning, while in fact they have many. Examples are parenthood, freedom, liberty, justice, capitalism, and tyranny. Some forms of this are:

A. In God's Name. Preventing the logical, rational analysis of an action, law, or policy is being done in the name of some abstraction considered good; like "God wills this."

B. Denotation and Connotation. Most words stand for things: such as cat, car, and house. The specific object or act that a word points to is that word's denotation. Abstractions, however, have no fixed denotations. They do, however, tend to have a fixed connotation, or moral judgement (good or bad). This leads to thinking you have said something when in reality you have said absolutely nothing.

C. Concretization. In order to have meaningful communication all abstractions must be concretized, or given meaning. Concretizing an abstraction clarifies the nature of the issue.

Application: Unconcretized Abstractions:

Underline each unconcretized abstraction.

1. Apparently has a fixed and definite meaning, but really doesn't.

2. Obscures the complexity of the subject.

3. Contains a built-in moral judgement.

4. Every child needs discipline.

5. Peace with honor.

6. Ethnic purity is not the way to describe government housing policy, but ethnic heritage is a great treasure.

7. End big government, return responsibility to state and local government.

Teacher Center

TA-3: How to Overcome Blocks to Logical Thinking

(Adapted from Adams, J. Conceptual Blockbusting: A Guide to Better Ideas. New York: W. W. Norton, 1979)

Conceptual blocks are mental walls that block the problem-solver from correctly perceiving a problem or conceiving its solution. Some examples:

1. Stereotyping: Seeing what you expect to see because of tending to assume all members of a particular social category are alike.

2. Difficulty in Isolating the Problems: In order to solve problems we must first properly identify the problem. Often this is hard to do because of inadequate clues or misleading information.

3. Tendency to Delimit the Problem Area Too Closely: At times, we cannot solve a problem because we have placed too many limitations on our solution.

4. Inability to See the Problem from Various Viewpoints: We need, if we are to completely understand the problem, to view it from the viewpoint of all the interests and parties involved.

5. Saturation: At times our senses become overloaded with data concerning a problem. This prevents us from noting what is necessary to solve the problem.

6. Failure to Utilize All Sensory Inputs: Problem solving should involve the use of all sensory inputs, not just those most comfortable to us.

The above six conceptual blocks all concern perceptual limits on problem solving. There are also emotional blocks. Some examples:

1. Fear of Taking a Risk: We have a need to be right. This often leads us into accepting common, safe, but erroneous solutions to problems. This helps our insecurity, but not our problem solving.

2. No Appetite for Chaos: At times, our insecurity leads us to impose order where none is needed. Ordering your thoughts in a precise manner prevents wildly disparate thoughts from co-existing long enough to combine to solve the problem.

3. Judging Rather Than Generating Ideas: If judgement, criticism, tough-mindedness, and practicality are applied too early or too indiscriminately in problem solving, many good ideas are rejected.

4. Inability to Incubate Ideas: Problem-solver needs time to think about the problem, time to sleep on it.

5. Lack of Challenge and Excessive Zeal: You must be motivated to solve a problem. Excessive motivation can inhibit the creative process.

6. Reality and Fantasy: Imagination if important to the problem solving process. However, a person must be able to separate fantasy and reality while attempting to solve problems.

The third type of blocks to logical thinking are cultural/ environmental blocks. Some examples:

1. Taboos: Cultural forbidden actions. Thinking about these actions is not forbidden and can help in problem solving.

2. Humor: People tend to think problem solving is a serious business where humor has no place. However, humor is an essential ingredient of healthy thinking.

3. Reason and Intuition: We often feel that reason is good and intuition is bad. In reality, both are good, and both are needed for problem solving.

4. Supportive Environments: Problem solving should take place in an environment that allows us to expand energy mainly on solving the problem, not on maintaining our egos.

The last types of blocks to logical thinking are intellectual and expressing blocks. Some examples:

1. Using the wrong language to solve the problem. (Verbal instead of visual, etc.)

2. Inflexible or inadequate intellectual problem-solving strategies.

3. Lack of information.

4. Inadequate language skills to express and record ideas.

TA-4: General Principles of Nonsense

(Adapted from Gula, R. Nonsense: How to Overcome It. New York: Stein and Day, 1979.)

1. People tend to believe what they want to believe.
2. People tend to project their own biases or experiences upon situations.
3. People tend to generalize from a specific event.
4. People tend to get personally involved in the analysis of an issue and tend to let their feelings overcome a sense of objectivity.
5. People are not good listeners. They hear selectively. They often hear only what they want to hear.
6. People are eager to rationalize.
7. People are often unable to distinguish what is relevant from what is irrelevant.
8. People are easily diverted from the specific issue at hand.
9. People are usually unwilling to explore thoroughly the ramifications of a topic; people tend to oversimplify.
10. People often judge from appearance. They observe something, misinterpret what they observe, and make terrible errors in judgements.
11. People often simply don't know what they are talking about, especially in matters of general discussion. They rarely think carefully before they speak, but they allow their feelings, prejudices, biases, likes, dislikes, hopes, and frustrations to supersede careful thinking.
12. People rarely act according to a set of consistent standards. Rarely do they examine the evidence and then form a conclusion. Rather, they tend to do whatever they want to do and to believe whatever they want to believe and then find whatever evidence will support their actions or their beliefs. They often think selectively: in evaluating a situation they are eager to find reasons to support what they want to support and they are just as eager to ignore or disregard reasons that don't support what they want.

13. People often do not say what they mean and they often do not mean what they say.

14. Most people want to feel that issues are simple rather than complex.

15. Most people want to have their prejudice confirmed.

16. Most people want to feel that they "belong" with the implication that others do not.

17. Most people need to pinpoint an enemy to blame for their frustrations.

TA-5: Some Exercises in Fallacies

(Adapted from Capaldi, N. The Art of Deception. New York: Prometheus Books, 1975)

EXERCISE 1

Identify the fallacy or potential difficulties in each of the following statements. More than one answer is sometimes possible.

1. Drink Schaeffer! It's New York's largest-selling beer.
2. According to the Congressional Record of June 6, Mr. Smith is a Communist.
3. White politician addressing Black voters: "My heart is as black as yours."
4. Of course Jones is in favor of building more hospitals. He's a building contractor, isn't he?
5. Of course Senator Jackson is in favor of bigger defense spending. The economy of his state depends on it.
6. I am not inconsistent, I am a pragmatist.
7. It is illegal to discriminate against Blacks, women, and left-handed people.
8. I refuse to take the polygraph test because the very suggestion that I take such a test is an attack on my integrity.
9. How can you possibly attack the Head-Start program? It has been successful in providing jobs and stimulating the economy.
10. We have to make a deal with Mayor Daley. Even John Kennedy did it.
11. The FX 17 has to be a superior fighter plane to the FX 16.
12. God helps those who help themselves.
13. Everything is relative.
14. Our program has been successful. Ask those who participated in it.
15. Have you stopped beating your wife?
16. The jury will never believe a three-time loser.

17. Make him an offer he can't refuse.

18. Everyone is a product of his environment; so we cannot really blame criminals. The real culprits are the members of the establishment who made the environment.

19. Our country should never become involved in any war, because all wars offer too many opportunities for criminal and immoral behavior on the part of our own troops.

20. We are not establishing quotas, we are against quotas. We are merely setting goals that we think can be achieved by a good-faith effort within the alloted timetables. Naturally, the best way to show your good faith is to achieve the goal.

21. This is a recession and not a depression.

22. IQ tests are not reliable. They do not measure intelligence but measure only the ability to comprehend and manipulate symbols. Besides, no one knows what intelligence really is.

23. There are two major problems in our society: first, not enough people get their fair share; and second, our society is too materialistic.

24. Eskimos are not short. I know of one who is seven feet tall.

25. Women earn less money than men; so your wife must earn less than you do.

26. Women have traditionally been discriminated against. Now it is time for men to get a taste of their own medicine.

27. Some have accused my administration of failure. But I see it as a glass half full rather than as a glass half empty.

28. There would be no welfare problem if all persons presently receiving welfare were hired as consultants to the government.

29. Plaintiff's attorney: "I know that the defendant's experts claim that he could not possibly be the father of my client's child, but experts have been known to be mistaken. Besides, he deserves to be punished for having sexual relations out of wedlock."

30. Instead of choosing between excellence and quotas, let us compromise: each group will be assigned a quota, but within each group there will be competition based upon excellence.

ANSWERS TO EXERCISE 1

1. Ad populum.
2. Misguided appeal to authority. The Congressional Record contains any statement made by any congressman, whether it is substantiated or not.
3. Appeal to self-interest or any one of the techniques for gaining a sympathetic audience.
4. Ad hominem.
5. Ad hominem.
6. Appeal to a higher truth.
7. Faculty classification.
8. Ad hominem. Abandon discussion.
9. Red herring; call for perfection; nothing but objections; appeal to self-interest, etc.
10. Appeal to precedent.
11. Higher numbers.
12. Circular argument.
13. Inconsistency.
14. Appeal to self-interest.
15. Complex question.
16. Ad hominem.
17. Appeal to force (ad baculum).
18. Inconsistency.
19. Red herring; appeal to pity.
20. Equivocation; creative thinking.
21. Equivocation.
22. Equivocation; inconsistency.
23. Inconsistency.
24. Composition.
25. Division.
26. Two wrongs make a right.
27. Figurative analogy; red herring.
28. Creative thinking.
29. Attack on expertise; red herring.
30. Golden mean.

EXERCISE 2: INDUCTIVE FALLACIES

1. Without public support I could not succeed.

2. The Vietnam war is responsible for all those young men in the service who became addicts.

3. If I am not sabotaged by my enemies, my plan will succeed.

4. I am opposed to charging tuition for college. Without tuition-free education, I could never have become mayor of this city.

5. Minority-group members have criminal tendencies. Did you ever notice how many of them are in our jails?

6. It has been claimed that since the establishment of the special program in astrology, grades have become inflated. That is not so. The grade spread in the history and psychology department, for example, have remained the same throughout this period.

ANSWERS TO EXERCISE 2

1. Affirming the consequent.
   If I do not have public support then I fall.
   I failed.
   Therefore, I did not have public support.

2. Post hoc or a violation of Mill's Methods.

3. Affirming the consequent.

4. Post hoc (at least twice).

5. Concomitant variation.

6. Misleading statistics.

TA-6: More Examples of Fallacies

(Adapted from Critical Thinking and Reasoning. A Handbook for Teachers. Albany: State University of New York, 10760, pp. 64-68)

1. The Ad Hominem Fallacy -- This fallacy derives its name from the Latin expression "ad hominem," meaning "(directed) to the man." The fallacy consists in attacking the person rather than the person's argument. The basic form of this fallacy is:

   Person P makes statement Z
   P is a "bad guy"

   Z is false (bad, wrong, undesirable, etc.)

   Ex. "Principal Carter proposed this grievance procedure for teachers. But he didn't even get his contract renewed for next year. Who's going to listen to anything he says?" This is fallacious because clearly the merits of the proposed grievance procedure are completely independent from whether Principal Carter was re-hired or not (which, of course, is not necessarily correlated with his competency as a principal).

2. Two Wrongs Make a Right -- This fallacy says essentially: "If they can get away with it, then so can I."

   Ex. It is alright for the U.S. to sell military arms to all the countries in the Middle East, even though the same arms are then used to conduct war against each other, because the Soviet Union does it too.

3. Common Practice or Appeal to Popularity -- The basic form of this fallacy is:

   It is commonly done (or done by the majority).

   It is right (good, desirable, excusable) for us to do it.

   Ex. Justification of huge salary increase for policemen on the grounds that firemen, sanitation workers, transit workers, etc., all received large increases.

4. Straw Man -- This fallacy consists in attacking a position which sounds like your opponent's position but which is really different. Here, one deliberately poses a weak and vulnerable position (the straw man) which, when it is destroyed, will hopefully cast doubt on the position of the opponent.

Ex. Al Capp quotes Mayor John Lindsay as saying: "The Americans I have unending admiration for are the guys who say, 'I simply will not serve in the Army of the United States and I am willing to take the consequences. Those are the guys who are heroic.'" Capp then remarks: "And so, if Lindsay is elected, his first act as commander-in-chief will, no doubt, be to withdraw the Army from everywhere..."

5. False Dilemma -- The reduction of alternatives or possibilities to only two when, in fact, there are others. Usually these two are constructed in such a way that one alternative is so "horrible" that no one in his right mind would choose it. This leaves only the other alternative, which just happens to be the one espoused by the speaker in the first place.

   Ex. Either you stamp down with force on this student unrest now or all learning will grind to a halt at this university.

6. Begging the Question -- Failure to give any support to the very issue in question, usually by assuming in the premises that which one purports to prove in the conclusion.

   Ex. Judith Crist is not a competent film critic because she is prejudiced; she is prejudiced because she does not like films with a lot of sex and violence; she does not like films with a lot of sex and violence because she is not a competent film critic.

7. Appeal to Authority -- This fallacy says: "Person P says it, and P is an authority, thus whatever she or he espouses must be true or good." This is fallacious when it appeals to an improper authority.

   Ex. Joe Namath is shown advertising panty hose. It would be perfectly legitimate to consult Joe as an authority in football. But we have no reason to believe that he is an authority on panty hose. Thus, an appeal to him as an authority is improper.

8. Appeal to Tradition -- This fallacy says: "We should do it this way or think this way just because it's always been this way."

   Ex. Teachers should penalize and/or punish students for not having their work done on time because it has always been this way.

9. Irrelevant Reason -- Use of considerations totally irrelevant to the conclusion or to the issue.

   Ex. Vote for Sidney Brown. He's a veteran.

10. Slippery Slope/Domino Theory -- This is the fallacious assumption that the first step in a possible series of steps inevitably leads to the rest. This is the familiar "once you open the flood gates..." argument.

    Ex. If you let her stay out past 10:00 p.m., the first thing you know she'll be out all night.

    (This might also be considered an instance of the straw man fallacy.)

    A common variation of this fallacy is the domino theory, the conclusion that if A falls, so will B, C, etc.

    Ex. If South Vietnam goes Communist, so will Laos, Cambodia, Thailand and all of Indo-China, and the Far East.

11. Jumping to Conclusion -- Basing a conclusion on relevant but insufficient evidence (closely connected to fallacy of Hasty Generalization).

    Ex. A news story reporting a local flurry of flag-stealing quoted one citizen as saying: "They took both the flag and the pole. This just thoroughly demonstrates the lack of law and order in our society today."

12. Argument from Analogy -- This is the fallacious assumption that just because two things have several characteristics in common, they will have yet another. The basic form of the fallacy:

    X has characteristics a, b, c, d, e
    Y has characteristics a, b, c, d, e
    X also has characteristic f

    Y also has characteristic f

    Ex. Sidney, who is Jewish, has been married twice before to Catholic women; and neither marriage worked out. He should know better than to get mixed-up with this new Catholic woman. It'll never work.

13. Distraction -- Turning the direction of an argument away from the point at issue by means of an emotive device or irrelevant consideration.

Ex. On the television program, Sanford and Son, Fred Sanford is defending himself in court on a traffic violation. He begins to cross-examine the arresting officer by asking, "What do you have against black drivers?"

14. Equivocation -- Changing the sense or meaning of a word or phrase in a way which makes the argument sound more persuasive than it really is.

Ex. Any country which holds elections is a democracy.
The Soviet Union holds elections.
Therefore, the Soviet Union is a democracy.

The expression "holds elections" clearly means two different things in the two premises.

15. Inconsistency -- Saying something now which is logically incompatible with what one said at another time; i.e., contradicting oneself. A special version of inconsistency consists in applying certain standards or principles to someone else, but failing to apply them to oneself.

Ex. Richard Nixon, September 13, 1966: "He (President Johnson) owes it to the people to come clean and tell them exactly what the plans are: the people should be told now, and not after the elections." Richard Nixon, March 10, 1968, now a candidate for president: "No one with this responsibility who is seeking office should give away any of his bargaining position in advance...under no circumstances should a man say what he would do next January."

16. Oversimplification -- Leaving out relevant considerations in an attempt to make issue appear simpler than it is.

17. Slanting -- A form of misrepresentation by means of suggesting something which is not true.

Ex. I notice that Ms. Cedarleaf sometimes stays after school with her pupils. At least somebody in this place cares about students.

18. Cliché Fallacy -- Unsupported claim that something is a concrete instance of the general principle contained in a familiar proverb or aphorism. The use of a cliché is not in itself fallacious. It is the failure to show either that (1) the general maxim itself is reliable or (2) this is indeed one of the instances covered by the general maxim.

Ex. Several people trying to prepare dinner and getting in each other's way. "Too many cooks spoil the broth."

Teacher center

19. Appeal to Pity -- Attempt to win assent by appealing to pity and sympathy of the listener.

    Ex. "Mr. Gallus, if you don't give me a B on this exam, I won't pass this course, and then I won't be able to graduate on time, and I already have this job waiting for me."

20. Complex Question -- Asking a question which assumes something which the person questioned regards as false.

    Ex. "Have you stopped beating your wife?"

TA-7: Commonly Used Nonsense Examples

(Adapted from Gula, R. Nonsense. New York: Stein and Day, 1979, pp. 151-59)

1. "Delta is ready when you are." (i.e., Delta Airlines)

2. (The setting is winter, Seattle, Washington. Four passengers are in a car. One asks another not to smoke in the car. The other's response:)

   "Stop making such a fuss. You reformed smokers are all alike. You're always trying to remind people that you were able to quit."

3. (Setting: A public official of a major city reacting to a strike of the city's transit workers:)

   "They're just a bunch of blackmailers, kidnapping hundreds of thousands of innocent commuters to extort some more money for themselves."

4. "If we don't save energy now, then fifty years from now there won't be any."

5. A darkhorse political candidate who campaigned loudly for tax reduction beats the favored candidate and ascribes his victory to

   "The tidal wave of tax revolt."

6. "Everything tastes better with Blue Bonnet on it." (i.e., Blue Bonnet margarine)

7. "Abortion represents the ultimate in child abuse, the exploitation of women and escapism. Since we live in a society that excels in all three categories, it is not surprising that many of our citizens consider abortion to be a logical solution to an inconvenience."

8. (Setting: In the winter of 1977, a California doctor, who had unsuccessfully given an abortion to a young woman, was accused of strangling the baby when the girl gave birth to a thirty-one week old fetus that showed some signs of being alive. The incident became a cause célèbre when the doctor came to trial in the spring of 1978. Here are two reactions to the story:)

a. "(The woman) wanted an abortion from (the physician). She got what she wanted: a dead fetus. Her $17 million litigation against the doctor is ludicrous."

b. "After reading the account of the...case, I fail to understand why he, alone, is on trial. Are countless other physicians who perform abortions less guilty than this doctor?"

9. (Setting: In the spring of 1978, President Carter strongly supported the selling of $4.8 billion worth of U.S. jet fighters to Israel, Egypt, and Saudi Arabia. A response:)

Because of a combination of Saudi oil blackmail and Carter/Brzezinski shortsided appeasement policy and apologetic propaganda, the Saudis will now get their military jets. But what that country, which still publicly beheads men and stones women to death, really needs is a twentieth century criminal code and not the most advanced weaponry made by mankind today."

10. (A quip from Time:)

"U.S. Congressman from Arizona...suggested that the Post Office should handle inflation: "They wouldn't solve it, but they'd certainly slow it down."

11. (A psychologist of New York University commenting on the widespread appeal of roller coasters and other thrill-rides at amusement parks:)

"They are a safe way of breaking free of the realistic limits and an adult way of letting go of one's parents."

12. "Unemployment—major illness—major repairs to your house or car. Or, on a happier note, your dream vacation—your new home—or your daughter's wedding. What do all these have in common? A good oldfashioned savings account which can help you survive the bad times and enjoy the good times even more. At Barrons Savings Bank, the savings account hasn't taken a back seat to all the gimmicks and so-called innovations you hear so much about today. It may sound a little bit old-fashioned, but the Barrons Savings Bank still feels that the savings account is the soundest investment you can make for your future. Barrons Savings Bank: it pays the highest interest rates allowed by law and all deposits are insured in full."

13. "I'm sorry I didn't write. I meant to. I just never got around to it."

14. Pentagon Spokesman: "You talk about inflation; you talk about overspending; you talk about wasting money. Don't talk about us. Look at the Department of Health, Education, and Welfare. They spend $500 million a day. We spend $118 billion a year. If you really want to talk about expenditures, go to HEW."

15. (The following are responses to articles on Joseph Califano, the former head of HEW, among whose many goals was to curtail the amount of cigarette smoking:)

a. "I read with alarm about Joseph Califano, Jr. Aside from the fact that he is a reformed smoker, the only thing I see that qualifies him for his position as Secretary of Health, Education, and Welfare is pure ego and compulsive overworking. I was not at all impressed with this continuation of an American stereotype and think he's headed for a heart attack. Why can't these zippy executives get their work finished on a normal work schedule?"

(Note: the above writer is referring to the fact that Califano often put in a work day of twelve or more hours.)

b. "When you chose to repeat Califano's baseless charge that cigarette advertising is designed to convince (young people) that smoking is glamorous, adult, and sexually attractive, you helped to perpetuate a myth Califano should know is incorrect. Without qualification, we deny the truth of these accusations. Smoking is an adult custom. We do not want or seek youngsters as customers. Numerous studies of teen-age smoking motivation show that other factors, such as peer influence, rejection of authority and the social environment, not advertising, are the major contributing factors. One needs only to look at increased teen-age use of marijuana, for which there are no ads, to see the faulty logic in these irresponsible charges."

(Note: the above response was submitted by a member of The Tobacco Institute, Inc.)

16. (A response to an article about a twenty-four year old man who is suing his parents "for the malpractice of parenting":)

"As long as we are suing our parents, let us all lodge a suit against Adam, the first of a long line of arents who did not know what they were getting into."

17. (Response to an article that described the glutted job market faced by English and foreign language teachers; even Ph.D.s are struggling to find jobs:)

"It used to be that a person with Ph.D. was one whose ability had been proved by the discovery of new knowledge or the successful defense of new ideas. How could 1,847 Ph.D. candidates in one year all discover new knowledge about English or languages, or develop new ideas and theories? The degree simply no longer means what it used to. Should its possessors expect to get what their predecessors did?"

18. "Only Brut gives you effective and long lasting protection plus the great smell of Brut."

19. (When the Surgeon General issued his second major report on smoking, Joseph Califano, former Secretary of Health, Education, and Welfare—himself an ex-smoker—wrote a strong foreword stressing the dangers of smoking. A spokesman for the tobacco industry remarked:)

"America beware if Joe Califano ever gives up drinking or other pleasure pursuits, even the most intimate."

ANSWERS

1. An exaggerated claim. I called Delta to see whether they could take me to Seattle. They couldn't. They weren't ready when I was.

2. Wrong reason; reversal of cause and effect. Someone else's smoke can be downright obnoxious.

3. Straw man: oversimplification, overreaction, exaggeration, and distortion; emotional language; negative image words; name-calling; use of labels.

4. Will the sun be gone in fifty years? What the speaker means to say is something like this: "If we don't save energy now, then fifty years from now we may not be able to rely upon the same energy sources that we rely upon now." Even the restatement, however, is an oversimplified point: Suppose that we do save energy now; won't we just be postponing the inevitable? Is the issue the conservation of present energy sources or the development of new sources?

5. Our poor politician doesn't realize that tidal waves are destructive. A most unfortunate metaphor.

6. Ever try Blue Bonnet on your sherbet?

7. Straw man; question begging definition—in fact, a very bizarre definition of child. A fetus is not a child. One wonders, furthermore, how abortion is tantamount to the exploitation of women. Does our society, in fact, excel in child abuse? Does it excel in the exploitation of women? Does it excel in escapism, whatever escapism means? The whole response is a series of non sequiturs and is probably motivated by a very strong emotional and personal reaction of the writer.

8. Neither response is willing to acknowledge that there is a difference between abortion and murder or, perhaps more precisely, between aborting an embryo and actually strangling a baby.

9. The response is guilty of either/or thinking. It consists of a series of non sequiturs. What does their criminal code have to do with their building of a powerful air force? A nice example of illicit contrast.

10. Equivocation. The logic is something like this: The Post Office is slow: it slows down the mail; it is therefore good at slowing things down. Inflation needs to be slowed down. Therefore, the Post Office should be in charge of inflation.

11. Anyone who is tempted to say nonsense to this statement should be careful. Unless we are trained psychologists and know what we are talking about, we had better remain silent.

12. This pitch equates old-fashioned with good: because it's old-fashioned, it's therefore good. What are these gimmicks and innovations, and why are they a threat to a savings account? One wonders whether the bank isn't protesting too much, whether all this hubbub about the good old days isn't some sort of rationalization. Furthermore, given our inflationary economy, is it true that "the savings account is the soundest investment" a person can make for the future?

13. Translation: "I didn't feel like writing" or "Writing was very low on my list of priorities."

14. Confusing contrast: $118 billion a year vs. $500 million a day; invitation to pursue a red herring: The issue is the Pentagon; HEW is a separate issue.

15. Response "a" forgets that Califano doesn't have a normal job. Why should being a reformed smoker qualify him to be Secretary of HEW?

    Does speaker "b" mean to suggest that smoking does not project an image of glamourousness, sophistication, and sexual attractiveness and that youth is not turned-on by such an image?

16. Straw man: reductio ad absurdum.

17. Translation: It is unlikely that all Ph.D.s have discovered something new or developed some new idea or theory. Therefore, all Ph.D.s have not discovered something new or developed some new idea or theory. Therefore, they don't deserve to have jobs. Response also confuses sufficient with contributory cause.

18. Circular reasoning here. All this statement says is that only Brut gives you the great smell of Brut. In no other way is Brut unique. The ad makes no claim about the uniqueness of Brut's protection. The use of the word "and" in this ad is clever and subtle.

19. An ad hominem attack, a mild appeal to humor (or perhaps sarcasm), and a reversal of cause and effect. The spokesman's reasoning goes something like this: The reason Califano is against smoking is that he himself is an ex-smoker. Consequently, if he ever quits drinking, he will find fault with that; and if he ever finds himself unable to engage in lovemaking, he will say that lovemaking is harmful.

    Of course, the spokesman will not admit the possibility that Califano stopped smoking because it is dangerous.

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TA-8: Love is a Fallacy

"Love Is a Fallacy" by Max Shulman. Copyright 1951 by Max Shulman

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TA-9: The Story of A-Town and B-Ville: Second Semantic Parable

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